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2001 anthrax attacks

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The **2001 anthrax attacks** in the United States, also known as **Amerithrax** from its **Federal Bureau of Investigation** (FBI) case name, occurred over the course of several weeks beginning on Tuesday, September 18, 2001, one week after the **September 11 attacks**. Letters containing **anthrax spores** were mailed to several news media offices and two **Democratic U.S. Senators**, killing five people and infecting 17 others. According to the FBI, the ensuing investigation became "one of the largest and most complex in the history of law enforcement".^[1]

A major focus in the early years of the investigation was a **bio-weapons** expert named **Steven Hatfill**, who was eventually **exonerated**. Another suspect, **Bruce Edwards Ivins**, became a focus of investigation around April 4, 2005. Ivins was a scientist who worked at the government's biodefense labs at **Fort Detrick** in **Frederick, Maryland**. On April 11, 2007, Ivins was put under periodic surveillance and an FBI document stated that "Bruce Edwards Ivins is an extremely sensitive suspect in the 2001 anthrax attacks."^[2] On July 29, 2008, Ivins died from an overdose of **acetaminophen**.^[3]

On August 6, 2008, despite having no direct evidence of his involvement,^{[4][5]} federal prosecutors declared Ivins to be the sole culprit of the crime.^[6] Two days later, Senator **Charles Grassley** and Rep. **Rush Holt** called for hearings into the DOJ and FBI's handling of the investigation.^{[7][8]} On February 19, 2010, the FBI formally closed its investigation.^[9]

A review of the scientific methods used in the investigation at

2001 Anthrax attacks



A letter sent to **Senate Majority Leader Tom Daschle** containing **anthrax** powder killed two postal workers

Location	New York City Boca Raton, Florida Washington, D.C.
Date	Letters postmarked September 18, 2001, and October 9, 2001; some were opened at a later date
Target	ABC News , CBS News , NBC News , <i>New York Post</i> , <i>National Enquirer</i> , Senators Tom Daschle and Patrick Leahy
Attack type	Bioterrorism
Weapons	Anthrax
Deaths	5
Non-fatal injuries	17 others infected
Suspected perpetrators	Bruce Edwards Ivins (inconclusive)

the [National Academy of Sciences](#),^[10] published in February 2011, cast doubt on the U.S. government's conclusion that Ivins was the perpetrator. The review report said that, although the type of anthrax used in the letters was correctly identified as the [Ames strain](#) of the bacterium, there was insufficient scientific evidence for the FBI's assertion that it originated from Ivins' laboratory. The FBI responded by pointing out that the review panel asserted that it would not be possible to reach a definite conclusion based on science alone, and said that a combination of factors led the FBI to conclude that Ivins had been the perpetrator.^[11] Some information about the case related to Ivins' mental problems is still "under seal".^{[12][13]} Lawsuits filed by the widow of victim Bob Stevens were settled by the government for \$2.5 million with no admission of [liability](#). According to a statement in the settlement agreement, the settlement was reached solely for the purpose of "avoiding the expenses and risks of further litigations."^[14]

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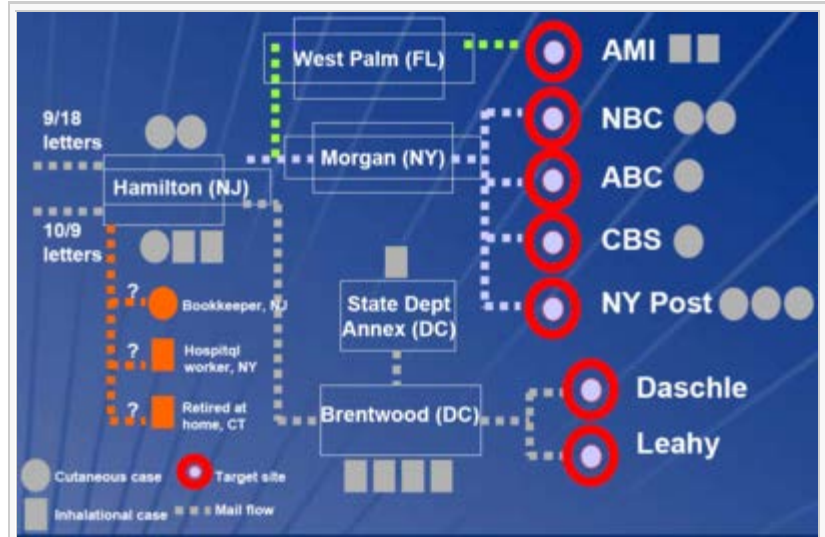
Overview [[edit](#)]

The attacks followed a week after the [September 11 attacks](#) which had caused the destruction of the [World Trade Center](#) in [New York City](#), damage to [The Pentagon](#) in [Arlington, Virginia](#) and the crash of an airliner in [Shanksville, Pennsylvania](#). As "a precaution", according to the *Washington Post*, [Cipro](#) was administered to [Dick Cheney](#) and his close staff on the evening of 9/11 as the Vice President was secreted off to an undisclosed location, days before the first anthrax letters were mailed.^[15] The anthrax attacks came in two waves. The first set of [anthrax](#) letters had a [Trenton, New Jersey postmark](#) dated

September 18, 2001. Five letters are believed to have been mailed at this time to: [ABC News](#), [CBS News](#), [NBC News](#) and the [New York Post](#), all located in New York City and to the [National Enquirer](#) at [American Media, Inc.](#) (AMI) in [Boca Raton, Florida](#).^[16] Robert Stevens, the first person who died from the mailings, worked at a tabloid called [Sun](#), also published by AMI, died on October 5, 2001, four days after entering a Florida hospital with an undiagnosed illness that caused him to vomit and be short of breath.^{[17][18]} Only the [New York Post](#) and [NBC News](#) letters were found;^[19] the existence of the other three letters is inferred because individuals at ABC, CBS and AMI became infected with anthrax. Scientists examining the anthrax from the *New York Post* letter said it appeared as a coarse brown granular material looking like [Purina Dog Chow](#).^[20]

Two more anthrax letters, bearing the same Trenton postmark, were dated October 9, three weeks after the first mailing. The letters were addressed to two Democratic Senators, [Tom Daschle](#) of South Dakota and [Patrick Leahy](#) of Vermont. At the time, Daschle was the Senate Majority leader and Leahy was head of the Senate Judiciary Committee. The Daschle letter was opened by an aide, Grant Leslie, on October 15, and the government mail service was shut down. The unopened Leahy letter was discovered in an impounded mail bag on November 16. The Leahy letter had been misdirected to the State Department mail annex in [Sterling, Virginia](#), due to a misread [ZIP code](#); a postal worker there, David Hose, contracted inhalational anthrax.

More potent than the first anthrax letters, the material in the Senate letters was a highly refined dry powder consisting of about one gram of nearly pure spores. A series of conflicting news reports appeared,



Seven letters are believed to have been mailed in the U.S., resulting in 22 infections; five people died.

some claiming the powders had been "weaponized" with [silica](#). Bioweapons experts who later viewed images of the attack anthrax saw no indication of "weaponization".^[21] Tests by Sandia National Laboratories in early 2002 confirmed that the attack powders were not weaponized.^{[22][23]}

At least 22 people developed anthrax infections, with 11 of these the especially life-threatening inhalational variety. Five died of inhalational anthrax: Stevens; two employees of the Brentwood mail facility in Washington, D.C., Thomas Morris Jr. and Joseph Curseen; and two whose source of exposure to the bacteria is still unknown, Kathy Nguyen, a [Vietnamese](#) immigrant resident in the borough of the Bronx who worked in New York City, and the last known victim Otilie Lundgren, a 94-year old widow of a prominent judge from [Oxford, Connecticut](#).

Because it took so long to identify a culprit, the 2001 anthrax attacks have been compared to the [Unabomber](#) attacks which took place from 1978 to 1995.^[24]

The letters ^[edit]

The anthrax letters are believed to have been mailed from [Princeton, New Jersey](#).^[25] In August 2002, investigators found anthrax spores in a city street mailbox located at 10 [Nassau Street](#) near the [Princeton University](#) campus. About 600 mailboxes that could have been used to mail the letters were tested for anthrax, and the Nassau Street box was the only one to test positive.

The [New York Post](#) and [NBC News](#) letters contained the following note:

09-11-01
THIS IS NEXT
TAKE PENACILIN NOW
DEATH TO AMERICA
DEATH TO ISRAEL
ALLAH IS GREAT

The second note that was addressed to Senators [Daschle](#) and [Leahy](#) read:

09-11-01
YOU CAN NOT STOP US.
WE HAVE THIS ANTHRAX.
YOU DIE NOW.
ARE YOU AFRAID?
DEATH TO AMERICA.
DEATH TO ISRAEL.
ALLAH IS GREAT.

All the letters were copies made by a copy machine. The originals were never found. Each letter was trimmed to a slightly different size. The



The Tom Brokaw (NBC) note



senate letter uses punctuation. The media letter does not. The handwriting on the media letter (and envelopes) is roughly twice the size of the handwriting on the senate letter (and envelopes).

The envelopes addressed to Senators Daschle and Leahy had the return address:

4th Grade
Greendale School
Franklin Park NJ 08852

The address is fictitious. [Franklin Park, New Jersey](#), exists, but the [ZIP code](#) 08852 is for nearby [Monmouth Junction, New Jersey](#). There is no Greendale School in Franklin Park or Monmouth Junction, New Jersey, though there is a Greenbrook Elementary School in adjacent [South Brunswick Township, New Jersey](#), of which Monmouth Junction is a part.

Hidden message [\[edit\]](#)

In the letters sent to the media, the characters 'A' and 'T' were sometimes bolded or highlighted by tracing over, suggesting that the letters contained a hidden code. [\[26\]](#)[\[27\]](#)[\[28\]](#)[\[29\]](#)[\[30\]](#)[\[31\]](#)

The letters to *The New York Post* [\[32\]](#) and Tom Brokaw [\[33\]](#) contained a "hidden message" in such highlighted characters. Below is the media text with the highlighted As and Ts:

09-11-01
THIS IS NEXT
TAKE PENACILIN NOW
DEATH TO AMERICA
DEATH TO ISRAEL
ALLAH IS GREAT

According to the [FBI](#) Summary Report issued on February 19, 2010, following the search of Ivins' home, cars, and office on November 1, 2007, investigators began examining his trash. [\[34\]](#) A week later, just after 1 a.m. on the morning of November 8, Ivins was observed throwing away "a copy of a book entitled [Gödel, Escher, Bach: An Eternal Golden Braid](#), published by Douglas Hofstadter in 1979" and "a 1992 issue of *American Scientist Journal* which contained an article entitled 'The Linguistics of DNA,' and discussed, among other things, [codons](#) and hidden messages". [\[35\]](#)

The book *Gödel, Escher, Bach* contains a lengthy description of the encoding/decoding procedures,

including an illustration of hiding a message within a message by bolding certain characters.^[36] According to the FBI Summary Report, "[w]hen they lifted out just the bolded letters, investigators got TTT AAT TAT – an apparent hidden message". The 3-letter groups are codons, "meaning that each sequence of three nucleic acids will code for a specific amino acid".^[37]

TTT = **Phenylalanine** (single-letter designator **F**)

AAT = **Asparagine** (single-letter designator **N**)

TAT = **Tyrosine** (single-letter designator **Y**)

The FBI Summary Report proceeds to say: "From this analysis, two possible hidden meanings emerged: (1) 'FNY' – a verbal assault on New York, and (2) PAT – the nickname of [Dr. Ivins'] Former Colleague #2." Ivins was known to have a dislike for New York City, and four of the media letters had been sent to New York.^[38] The report states that it "was obviously impossible for the Task Force to determine with certainty that either of these two translations was correct", however, "the key point to the investigative analysis is that there is a hidden message, not so much what that message is."^[39] Ivins showed a fascination with codes and also had an interest in secrets and hidden messages.^[40] He also was familiar with biochemical codons.^[41]

White House precautions ^[edit]

In early September 2001, **White House** staff began taking a regimen of **ciprofloxacin** (Cipro), a powerful antibiotic; on September 11, staff accompanying Vice President Dick Cheney were given Cipro.^[42] The public interest group **Judicial Watch** filed lawsuits in June 2002 against federal agencies to obtain information about how, what and when the White House knew on 9/11 about the danger of anthrax weeks before the first known victim of the anthrax attacks.^{[43][44]}

Other letters reported in the media ^[edit]

The Amerithrax investigation involved many leads which took time to evaluate and resolve. Among them were numerous letters which initially appeared to be related to the anthrax attacks but were never directly linked to the anthrax attacks.

For example, before the New York letters were found, **hoax** letters mailed from St. Petersburg, Florida were thought to be the anthrax letters or related to them.^{[45][46]} A letter received at the Microsoft offices in Reno, NV, after the discovery of the Daschle letters gave a **false positive** in a test for anthrax.^[47] Later, because the letter had been sent from Malaysia, Marilyn Thompson of the *Washington Post* connected the letter to **Steven Hatfill**, whose girlfriend was from Malaysia.^[48] The letter merely contained a check and some pornography, and was neither a threat nor a hoax.^[49]

Also unconnected to the anthrax attacks was a large envelope received at **American Media, Inc.** in Boca Raton, Florida (which was among the victims of the attacks) in September 2001. It was addressed "Please forward to Jennifer Lopez c/o The Sun", containing a metal cigar tube with a cheap cigar inside, an empty can of chewing tobacco, a small detergent carton, pink powder, a Star of David pendant, and "a handwritten letter to Jennifer Lopez. The writer said how much he loved her and asked her to marry ^[50]

him." Another letter, which mimicked the original anthrax letter to Senator Daschle, was mailed to Daschle from London in November 2001, at a time when Hatfill was in England, not far from London.^{[51][52][53]} Shortly before the discovery of the anthrax letters, someone sent a letter to authorities stating, "Dr. Assaad is a potential biological terrorist."^[54] No connection to the anthrax letters was ever found.

During the first years of the FBI's investigation, Don Foster, a professor of English at Vassar College, attempted to connect the anthrax letters and various hoax letters from the same period to Steven Hatfill.^[55] Foster's beliefs were published in *Vanity Fair* and *Readers' Digest*. Hatfill sued and was later exonerated. The lawsuit was settled out of court.^[56]

Anthrax letter to Chile [\[edit\]](#)

Shortly after the anthrax attacks in the United States, another letter containing traces of a second strain of anthrax was mailed to a pediatrician in Santiago, Chile. The letter was postmarked in Switzerland and sent via DHL, which used a Swiss bulk mail shipper in New York. This letter had an Orlando, Florida return address. No one is known to have been infected from it.^[57]

Anthrax material [\[edit\]](#)

The letters sent to the media contained a coarse brown material, while the letters sent to the two U.S. Senators contained a fine powder.^{[58][59]} The brown granular anthrax mostly caused skin infections, cutaneous [anthrax](#) (9 out of 12 cases), although Kathy Nguyen's case of inhalation anthrax occurred at the same time and in the same general area as two cutaneous cases and several other exposures. The AMI letter which caused inhalation cases in Florida appears to have been mailed at the same time as the other media letters. The fine powder anthrax sent to the senators mostly caused the more dangerous form of infection known as inhalational anthrax (8 out of 10 cases). Postal worker Patrick O'Donnell and accountant Linda Burch contracted cutaneous anthrax from the Senate letters.

All of the material was derived from the same bacterial [strain](#) known as the [Ames strain](#).^[60] Prior to the attacks, the Ames strain was believed to be a common strain isolated from a cow in Iowa. After the attacks, the investigation discovered that it was a relatively rare strain isolated from a cow in Texas in 1981 - a critical fact in the investigation.^{[61][62]} First researched at the [United States Army Medical Research Institute of Infectious Diseases](#) (USAMRIID), Fort Detrick, Maryland, the Ames strain was then distributed to sixteen bio-research labs within the U.S. and three other locations (Canada, Sweden and the United Kingdom).^[63]

DNA sequencing of the anthrax taken from Robert Stevens (the first victim) was conducted at [The Institute for Genomic Research](#) (TIGR) beginning in December 2001. Sequencing was finished within a month and the analysis was published in the journal *Science* in early 2002.^[64]

[Radiocarbon dating](#) conducted by the [Lawrence Livermore National Laboratory](#) in June 2002 established that the anthrax was [cultured](#) no more than two years before the mailings.^[65] In October 2006 it was reported that the water used to process the anthrax spores came from a source in the northeastern United

States.^[66]

Mutations ^[edit]

Early in 2002, it was noted that there were variants or mutations in the anthrax powders from the attacks. Once the mutations were identified as Ames, TIGR became involved to help further identify the mutations. Most of their work was completed between 2002 and late 2003. Other experts in biodefense were contracted to assist in developing the [assays](#). The assays were validated over the many years of the investigation, and the repository of Ames samples was also being built. From roughly 2003 to 2006 the repository and the screening of the 1,070 Ames samples in that repository were completed.^[67]

Based on the testing, the FBI concluded that flask RMR-1029 was the parent material of the anthrax spore powder. Ivins had sole control over that flask.^[68]

Controversy over coatings and additives ^[edit]

On October 24, 2001, USAMRIID scientist Peter Jahrling was summoned to the White House after he reported signs that silicon had been added to anthrax recovered from the letter addressed to Daschle. Silicon would make the anthrax more capable of penetrating the lungs. Seven years later, Jahrling told the Los Angeles Times on September 17, 2008, "I believe I made an honest mistake", adding that he had been "overly impressed" by what he thought he saw under the microscope.^[69]

Richard Preston's book^[70] provides details of conversations and events at USAMRIID during the period from October 16, 2001 to October 25, 2001. Key scientists described to Preston what they were thinking during that period. When the Daschle spores first arrived at USAMRIID, the key concern was that smallpox viruses might be mixed with the spores. "Jahrling met [John] Ezzell in a hallway and said, in a loud voice, 'Goddamn it, John, we need to know if the powder is laced with smallpox.'" Thus, the initial search was for signs of smallpox viruses. On October 16, USAMRIID scientists began by examining spores that had been "in a milky white liquid" from "a field test done by the FBI's Hazardous Materials Response Unit". Liquid chemicals were then used to deactivate the spores. When scientists turned up the power on the electron beam of the Transmission Electron Microscope (TEM), "The spores began to ooze." According to Preston,

"'Whoa,' Jahrling muttered, hunched over the eyepieces. Something was boiling off the spores. 'This is clearly bad stuff,' he said. This was not your mother's anthrax. The spores had something in them, an additive, perhaps. Could this material have come from a national bioweapons program? From Iraq? Did al-Qaeda have anthrax capability that was this good?"

On October 25, 2001, the day after senior officials at the White House were informed that "additives" had been found in the anthrax, USAMRIID scientist Tom Geisbert took a different, irradiated sample of the Daschle anthrax to the Armed Forces Institute of Pathology (AFIP) to "find out if the powder contained any metals or elements". AFIP's energy dispersive X-ray spectrometer reportedly indicated "that there were two extra elements in the spores: silicon and oxygen. Silicon dioxide is glass. The anthrax terrorist or terrorists had put powdered glass, or silica, into the anthrax. The silica was powdered so finely that under Geisbert's electron microscope it had looked like fried-egg gunk dripping off the spores."

The "goop" Peter Jahrling had seen oozing from the spores was not seen when AFIP examined different spores killed with radiation.

The controversy began the day after the White House meeting. The New York Times reported, "Contradicting Some U.S. Officials, 3 Scientists Call Anthrax Powder High-Grade - Two Experts say the anthrax was altered to produce a more deadly weapon,"^[71] and The Washington Post reported, "Additive Made Spores Deadlier".^[72] Countless news stories discussed the "additives" for the next eight years, continuing into 2010.^{[73][74]}

Later, the FBI claimed a "lone individual" could have created the anthrax spores for as little as \$2,500, using readily available laboratory equipment.^[75]

A number of press reports appeared suggesting the Senate anthrax had coatings and additives.^{[76][77]} *Newsweek* reported the anthrax sent to Senator Leahy had been coated with a chemical compound previously unknown to bioweapons experts.^[78] On October 28, 2002, The Washington Post reported, "FBI's Theory on Anthrax is Doubted"^[79] suggesting that the senate spores were coated with fumed silica. Two bioweapons experts utilized as consultants by the FBI, [Kenneth Alibek](#) and [Matthew Meselson](#), were shown electron micrographs of the anthrax from the Daschle letter. In a November 5, 2002 letter to the editors of the *Washington Post* they stated that they saw no evidence the anthrax spores had been coated with fumed silica.^[21]

The November 28, 2003, issue of *Science* magazine contained an article by Gary Mastumoto titled, "Anthrax Powder: State of the Art?" It suggests that the senate anthrax "was a diabolical advance in biological weapons technology". The article describes "a technique used to anchor silica nanoparticles to the surface of spores" using "polymerized glass". According to Stuart Jacobsen, "polymerized glass" is "a silane or siloxane compound that's been dissolved in an alcohol- based solvent like ethanol". It leaves a thin glassy coating that helps bind the silica to particle surfaces.^[80]

The August 2006 issue of *Applied and Environmental Microbiology* contained an article written by Douglas Beecher of the FBI labs in Quantico, VA.^[81] The article, titled "Forensic Application of Microbiological Culture Analysis to Identify Mail Intentionally Contaminated with *Bacillus anthracis* spores," states "Individuals familiar with the compositions of the powders in the letters have indicated that they were comprised simply of spores purified to different extents." The article also specifically criticizes "a widely circulated misconception" "that the spores were produced using additives and sophisticated engineering supposedly akin to military weapon production". The harm done by this misconception is described this way: "This idea is usually the basis for implying that the powders were inordinately dangerous compared to spores alone. The persistent credence given to this impression fosters erroneous preconceptions, which may misguide research and preparedness efforts and generally detract from the magnitude of hazards posed by simple spore preparations." Critics of the article complained that it did not provide supporting references.^{[82][83]}

False report of Bentonite ^[edit]

In late October 2001, [ABC](#) chief investigative correspondent [Brian Ross](#) linked the anthrax sample to [Saddam Hussein](#) because of its purportedly containing the unusual additive [bentonite](#). On October 26, Ross

said, "sources tell ABCNEWS the anthrax in the tainted letter sent to Senate Majority Leader Tom Daschle was laced with bentonite. The potent additive is known to have been used by only one country in producing biochemical weapons — Iraq. . . . [I]t is a trademark of Iraqi leader Saddam Hussein's biological weapons program . . . The discovery of bentonite came in an urgent series of tests conducted at Fort Detrick, Maryland, and elsewhere." On October 28, Ross said that "despite continued White House denials, four well-placed and separate sources have told ABC News that initial tests on the anthrax by the U.S. Army at Fort Detrick, Maryland, have detected trace amounts of the chemical additives bentonite and silica",^[84] a charge that was repeated several times on October 28 and 29.^[85]

On October 29, 2001, White House spokesman Scott Stanzel "disputed reports that the anthrax sent to the Senate contained bentonite, an additive that ha[d] been used in Iraqi President Saddam Hussein's biological weapons program." Stanzel said, "Based on the test results we have, no bentonite has been found."^[86] The same day, Major General John Parker at a White House briefing stated, "We do know that we found silica in the samples. Now, we don't know what that motive would be, or why it would be there, or anything. But there is silica in the samples. And that led us to be absolutely sure that there was no aluminum in the sample, because the combination of a silicate, plus aluminum, is sort of the major ingredients of bentonite."^[87] Just over a week later, [Homeland Security](#) Director [Tom Ridge](#) in a White House press conference on November 7, 2001 stated, "The ingredient that we talked about before was silicon."^[88] Neither Ross at ABC nor anyone else publicly pursued any further claims about bentonite, despite Ross's original claim that "four well-placed and separate sources" had confirmed its detection.

Dispute over silicon content [\[edit\]](#)

Some of the anthrax spores (65-75%) in the anthrax attack letters contained silicon inside their spore coats. Silicon was even reportedly found inside the natural spore coat of a spore that was still inside the "mother germ", which was asserted to confirm that the element was not added after the spores were formed and purified, i.e., the spores were not "weaponized".^{[22][23]}

In 2010, a Japanese study reported, "silicon (Si) is considered to be a "quasiessential" element for most living organisms. However, silicate uptake in bacteria and its physiological functions have remained obscure." The study showed that spores from some species can contain as much as 6.3% dry weight of silicates.^[89] "For more than 20 years, significant levels of silicon had been reported in spores of at least some *Bacillus* species, including those of *Bacillus cereus*, a close relative of *B. anthracis*." According to spore expert Peter Setlow, "Since silicate accumulation in other organisms can impart structural rigidity, perhaps silicate plays such a role for spores as well."^[90]

The FBI lab concluded that 1.4% of the powder in the Leahy letter was silicon. Stuart Jacobson, a small-particle chemistry expert stated that:

"This is a shockingly high proportion [of silicon]. It is a number one would expect from the deliberate weaponization of anthrax, but not from any conceivable accidental contamination."^[91]

Scientists at the [Lawrence Livermore National Labs](#) conducted experiments in an attempt to determine if

the amount of silicon in the growth medium was the controlling factor which caused silicon to accumulate inside a spore's natural coat. The Livermore scientists tried 56 different experiments, adding increasingly high amounts of silicon to the media. All of their results were far below the 1.4% level of the attack anthrax, some as low as .001%. The conclusion was that something other than the level of silicon controlled how much silicon was absorbed by the spores.^{[91][92]}

[Richard O. Spertzel](#), a microbiologist who led the United Nations' biological weapons inspections of Iraq, wrote that the anthrax used could not have come from the lab where Ivins worked.^[93] Spertzel said he remained skeptical of the Bureau's argument despite the new evidence presented on August 18, 2008 in an unusual FBI briefing for reporters. He questioned the FBI's claim that the powder was less than military grade, in part because of the presence of high levels of silica. The FBI had been unable to reproduce the attack spores with the high levels of silica. The FBI attributed the presence of high silica levels to "natural variability".^[94] This conclusion of the FBI contradicted its statements at an earlier point in the investigation, when the FBI had stated, based on the silicon content, that the anthrax was "weaponized," a step that made the powder more airy and required special scientific know-how.^[95]

"If there is that much silicon, it had to have been added," stated Jeffrey Adamovicz, who supervised Ivins's work at Fort Detrick.^[91] Adamovicz explained that the silicon in the attack anthrax could have been added via a large fermentor, which [Battelle](#) and some other facilities use" but "we did not use a fermentor to grow anthrax at USAMRIID . . . [and] We did not have the capability to add silicon compounds to anthrax spores." Ivins had neither the skills nor the means to attach silicon to anthrax spores. Richard Spertzel explained that the Fort Detrick facility did not handle anthrax in powdered form. "I don't think there's anyone there who would have the foggiest idea how to do it."^[91]

Investigation [\[edit\]](#)

Authorities traveled to six continents, interviewed over nine thousand people, conducted 67 searches and issued over 6,000 subpoenas.

"Hundreds of FBI personnel worked the case at the outset, struggling to discern whether the Sept. 11 al-Qaeda attacks and the anthrax murders were connected before eventually concluding that they were not."^[96] In September 2006, there were still 17 FBI agents and 10 [postal inspectors](#) assigned to the case, including FBI Special Agent [C. Frank Figliuzzi](#) who was the on-scene commander of the evidence recovery efforts.^{[[citation needed](#)]}

Anthrax archive destroyed [\[edit\]](#)

The FBI and Centers for Disease Control and Prevention both gave permission for Iowa State University to destroy the Iowa anthrax archive, and the archive was destroyed on October 10 and 11, 2001.^[97]

The FBI and Centers for Disease Control and Prevention (CDC)

SPECIAL REWARD
Up to **\$2.5 million**

For information leading to the arrest and conviction of the individual(s) responsible for the mailing of letters containing anthrax to the New York Post, Tom Brinkaw at NBC, Senator Tom Daschle and Senator Patrick Leahy:

Four US postage stamps are displayed, each featuring a different person's name and address, with a 'SPECIAL REWARD' banner at the top. The stamps are:

- Top Left:** ERICHA NEW BRK POST, 3211 AVE. OF THE AMERICANS, NEW SMYTH, MD 20634.
- Top Right:** SENATOR DASCHLE, 509 EAST SENATE CHANCE, BUILDING, WASHINGTON, DC 20510-4402.
- Bottom Left:** TOM BRINKAW, NBC TV, 30 HUNTERSBURG BLVD, NEW YORK, NY 10112.
- Bottom Right:** SENATOR LEAHY, 548 PACIFIC SENATE CHANCE, BUILDING, WASHINGTON, DC 20510-4402.

**AS A RESULT OF EXPOSURE TO ANTHRAX,
FIVE (5) PEOPLE HAVE DIED.**

The person responsible for these deaths...

- Likely has a scientific background/work history which may include a specific familiarity with anthrax
- Has a level of comfort in and around the Trenton, NJ area due to present or prior association

Anyone having information, contact **America's Most Wanted** at 1-800-CRIME TV or the FBI via e-mail at ameranthrax@fbi.gov

All information will be held in strict confidence. Reward payment will be made in accordance with the conditions of **Postal Service Reward Poster 296**, dated February 2000. Source of reward funds: U.S. Postal Service and \$2,030,000; ADVO, Inc. \$500,000.

A reward for information totalling \$2.5 million is being

investigation has been hampered by the destruction of a large collection of anthrax spores collected over more than seven decades and kept in more than 100 vials at [Iowa State University](#), Ames, Iowa. Many scientists claim that the quick destruction of the anthrax spores collection in Iowa eliminated crucial evidence useful for the investigation. A precise match between the strain of anthrax used in the attacks and a strain in the collection would have offered hints as to when bacteria had been isolated and, perhaps, as to how widely it had been distributed to researchers. Such genetic clues could have given investigators the evidence necessary to identify the perpetrators.^[97]

offered by the FBI, [U.S. Postal Service](#) and ADVO, Inc.

Al-Qaeda and Iraq blamed for attacks ^[edit]

Immediately after the anthrax attacks, [White House](#) officials repeatedly pressured [FBI Director Robert Mueller](#) to prove that they were a second-wave assault by [al-Qaeda](#) following the [September 11 attacks](#). During the president's morning intelligence briefings, Mueller was "beaten up" for not producing proof that the killer spores were the handiwork of terrorist mastermind [Osama Bin Laden](#), according to a former aide. "They really wanted to blame somebody in the Middle East," the retired senior FBI official stated. The FBI knew early on that the anthrax used was of a consistency requiring sophisticated equipment and was unlikely to have been produced in some "cave". At the same time, both President Bush and Vice President Cheney in public statements speculated about the possibility of a link between the anthrax attacks and Al Qaeda.^[98] [The Guardian](#) reported in early October that American scientists had implicated Iraq as the source of the anthrax,^[99] and the next day the [Wall St. Journal](#) editorialized that Al Qaeda perpetrated the mailings, with Iraq the source of the anthrax.^[100] A few days later, [John McCain](#) suggested on the [Late Show with David Letterman](#) that the anthrax may have come from Iraq,^[101] and the next week [ABC News](#) did a series of reports stating that three or four (depending on the report) sources had identified [bentonite](#) as an ingredient in the anthrax preparations, implicating Iraq.^{[102][84][85]}

Statements by the White House^[86] and public officials^[87] quickly proved that there was no bentonite in the attack anthrax. "No tests ever found or even suggested the presence of bentonite. The claim was just concocted from the start. It just never happened."^[103] But, a few journalists repeated ABC's bentonite report for several years,^{[104][105][106]} even after the invasion of Iraq, as evidence that Saddam not only possessed "[weapons of mass destruction](#)", but had used them in attacks on the United States.

"Person of interest" – Steven Jay Hatfill ^[edit]

In October 2001, as soon as it became known that the Ames strain of anthrax had been used in the attacks, longtime anti-nuclear, anti-biological warfare defense activist [Barbara Hatch Rosenberg](#) and others began suggesting that the attack might be the work of a "rogue CIA agent," and they provided the name of the "most likely" person to the FBI.^[107] On November 21, 2001, she made similar statements to the Biological and Toxic Weapons convention in Geneva.^[108] In December 2001, she published "A Compilation of Evidence and Comments on the Source of the Mailed Anthrax" via the web site of [The Federation of American Scientists](#) (FAS) suggesting the attacks were "perpetrated with the unwitting assistance of a sophisticated government program".^[109] She discussed the case with reporters from the [New York Times](#).^[110] On January 4, 2002, [Nicholas Kristof](#) of the New York Times published a column titled "Profile of

a Killer"^[111] stating "I think I know who sent out the anthrax last fall." For months, Rosenberg gave speeches and stated her beliefs to many reporters from around the world. She posted "Analysis of the Anthrax Attacks" to the FAS web site on January 17, 2002. On February 5, 2002 she published "Is the FBI Dragging Its Feet?"^[112] In response, the FBI stated, "There is no prime suspect in this case at this time."^[113] The Washington Post reported, "FBI officials over the last week have flatly discounted Dr. Rosenberg's claims."^[114] On June 13, 2002, Rosenberg posted "The Anthrax Case: What the FBI Knows" to the FAS site.^[115] On June 18, 2002, Rosenberg presented her theories to senate staffers working for Senators Daschle and Leahy.^[116] One week later, on June 25, the FBI publicly searched Hatfill's apartment. He becomes a household name. "The FBI also pointed out that Hatfill had agreed to the search and is not considered a suspect."^[117] American Prospect and Salon.com report, "Hatfill is not a suspect in the anthrax case, the FBI says."^[118] On August 3, 2002, Rosenberg tells the media that the FBI asked her if "a team of government scientists could be trying to **frame** Steven J. Hatfill."^[119] In August 2002, **Attorney General John Ashcroft** labeled **Steven Hatfill** a "**person of interest**" in a press conference, no charges were brought against him. Hatfill, a **virologist**, vehemently denied he had anything to do with the anthrax (bacteria) mailings and sued the FBI, the Justice Department, John Ashcroft, **Alberto Gonzales**, and others for violating his **constitutional** rights and for violating the **Privacy Act**. On June 27, 2008, the Department of Justice announced it would settle Hatfill's case for \$5.8 million.^[120]

He has also sued *The New York Times* and its columnist **Nicholas D. Kristof** and, separately, **Donald Foster**, *Vanity Fair*, *Reader's Digest*, and **Vassar College**, for **defamation**. The case against *The New York Times* was initially dismissed,^[121] but it was reinstated on appeal. The dismissal was upheld by the appeals court on July 14, 2008 on the basis that Hatfill was a "public figure" and malice had not been proven.^[122] The case was appealed to the U.S. Supreme Court and was rejected by the Supreme Court on December 15, 2008.^[123] Hatfill's lawsuit against **Vanity Fair** and **Reader's Digest** was settled out of court in February 2007. No details of the financial settlement were made public. The statement released by Hatfill's lawyers^[56] only says "Dr. Hatfill's lawsuit has now been resolved to the mutual satisfaction of all the parties."

Bruce Edwards Ivins [edit]



Bruce Edwards Ivins [edit]
in 2003.

On August 1, 2008 the Associated Press reported that **Bruce E. Ivins**, 62, who worked for the past eighteen years at the government's bio defense labs at **Fort Detrick**, had apparently committed suicide. Ivins was a top U.S. biodefense researcher who worked at Ft. Detrick. It was widely reported the FBI was about to lay charges on him, but the evidence was largely circumstantial and the grand jury in Washington reported it was not ready to issue an indictment.^[124] Rep. **Rush Holt**, who represents the district where the anthrax letters were mailed, said circumstantial evidence was not enough and asked FBI Director **Robert S. Mueller** to appear before Congress to provide an account of the investigation.^[125] Ivins's death leaves two unanswered puzzles. Scientists familiar with germ warfare said there was no evidence that he had the skills to turn anthrax into an inhalable powder. According to Alan Zelicoff who aided the F.B.I. investigation "I don't think a vaccine specialist could do it . . . This is aerosol physics, not biology".^[126]

W. Russell Byrne, a colleague who worked in the bacteriology division of the Fort Detrick research facility, said Ivins was "hounded" by FBI agents who raided his home twice, and he was hospitalized for depression during that time. According to Byrne and local police, Ivins was removed from his workplace out of fears that he might harm himself or others. "I think he was just psychologically exhausted by the whole process," Byrne said. "There are people who you just know are ticking bombs," Byrne said. "He was not one of them."^[127]

On August 6, 2008, federal prosecutors declared Ivins to be the sole culprit of the crime when [Jeffrey Taylor](#), the U.S. attorney for the [District of Columbia](#) laid out the case against Ivins to the public. The main evidence is already in dispute. Taylor stated "The genetically unique parent material of the anthrax spores . . . was created and solely maintained by Dr. Ivins." But other experts disagree, including biological warfare and anthrax expert, [Meryl Nass](#), who stated: "Let me reiterate: No matter how good the microbial forensics may be, they can only, at best, link the anthrax to a particular strain and lab. They **cannot** link it to any individual." At least 10 scientists had regular access to the laboratory and its anthrax stock, and possibly quite a few more, counting visitors from other institutions, and workers at laboratories in Ohio and New Mexico that had received anthrax samples from the flask.^[4] The FBI later claimed to have identified 419 people at Fort Detrick and other locations who had access to the lab where flask RMR-1029 was stored, or who had received samples from flask RMR-1029.^[128]

Mental health issues ^[edit]

More than a year before the anthrax attacks of 2001 that killed five people, Bruce E. Ivins told a mental health counselor that he was interested in a young woman who lived out of town and that he had "mixed poison" that he took with him when he went to watch her play in a soccer match.

"If she lost, he was going to poison her," said the counselor, who treated Ivins at a Frederick clinic four or five times during the summer of 2000. She said Ivins emphasized that he was a skillful scientist who "knew how to do things without people finding out".

The counselor "was so alarmed by her client's emotionless description of a specific, homicidal plan that she immediately alerted the head of her clinic and a psychiatrist who had treated Ivins, as well as the Frederick Police Department. She said the police told her that nothing could be done because she did not have the woman's address or last name."^[129]

Nine years later, when Ivins told a different therapist that he planned to kill his co-workers and "go out in a blaze of glory," that therapist stated in an application for a restraining order that Ivins had a "history dating to his graduate days of homicidal threats, actions, plans, threats & actions towards therapist [sic]. Dr. David Irwin his psychiatrist called him homicidal, sociopathic with clear intentions".^[130]

Evidence of consciousness of guilt ^[edit]

According to the report on the Amerithrax investigation published by the Department of Justice, Ivins engaged in actions and made statements that indicate a consciousness of guilt. He took environmental samples in his laboratory without authorization and decontaminated areas in which he had worked without

reporting his activities. He also threw away a book about secret codes, which described methods similar to those used in the anthrax letters. Ivins threatened other scientists, made equivocal statements about his possible involvement in a conversation with an acquaintance, and put together outlandish theories in an effort to shift the blame for the anthrax mailings to people close to him.^[131]

The FBI said that Ivins' justifications for his actions after the environmental sampling, as well as his explanations for a subsequent sampling, contradicted his explanation for the motives for the sampling.^[132]

According to the Department of Justice, flask RMR-1029, which was created and controlled by Ivins, was used to create "the murder weapon".^{[63][133][134][135]}

In 2002, researchers did not believe it was possible to distinguish between Anthrax variants.^[136] In January 2002, Ivins suggested that DNA sequencing should show differences in the genetics of anthrax mutations which would allow the source to be identified. Despite researchers advising the FBI that this may not be possible, Ivins tutored agents on how to recognise them. Considered cutting edge at the time, this technique is now commonplace.^[136] In February 2002, Ivins volunteered to provide samples from several variants of the Ames strain in order to compare their morphs. He submitted two test tube "slants" each from four samples of the Ames strain in his collection. Two of the slants were from flask RMR-1029. Although the slants from flask RMR-1029 were later reported to be a positive match, all eight slants were reportedly in the wrong type of test tube and would therefore not be usable as evidence in court. On March 29, 2002, Ivins' boss instructed Ivins and others in Suites B3 and B4 on how to properly prepare slants for the FBI Repository. The subpoena also included instructions on the proper way to prepare slants. When Ivins was told that his February samples did not meet FBIR requirements, he prepared eight new slants. The two new slants prepared from flask RMR-1029 submitted in April by Ivins did not contain the mutations that were later determined to be in flask RMR-1029.^{[137][138]}

It was reported that in April 2004, Henry Heine found a test tube in the lab containing anthrax and contacted Ivins.^[136] In an email sent in reply, Ivins reportedly told him it was "probably RMR-1029" and for Heine to forward a sample to the FBI.^[136] Doubts regarding the reliability of the FBI tests were later raised when the FBI tested Heine's sample and a further one from Heine's test tube: one tested negative and one positive.^[136]

A DOJ Summary report of February 19, 2010 said that "the evidence suggested that Dr. Ivins obstructed the investigation either by providing a submission which was not in compliance with the subpoena, or worse, that he deliberately submitted a false sample."^[139] Records released under the [Freedom of Information Act](#) in 2011 show that Ivins provided four sets of samples from 2002 to 2004, twice the number the FBI reported. Three of the four sets tested positive for the morphs.^[136]

The FBI said that "At a group therapy session on July 9, 2008, Dr. Ivins was particularly upset. He revealed to the counselor and psychologist leading the group, and other members of the group, that he was a suspect in the anthrax investigation and that he was angry at the investigators, the government, and the system in general. He said he was not going to face the death penalty, but instead had a plan to 'take out' co-workers and other individuals who had wronged him. He noted that it was possible, with a plan, to commit murder and not make a mess. He stated that he had a bullet-proof vest, and a list of co-workers

who had wronged him, and said that he was going to obtain a Glock firearm from his son within the next day, because federal agents were watching him and he could not obtain a weapon on his own. He added that he was going to 'go out in a blaze of glory.'"^[140]

While in a mental hospital, Ivins made menacing phone calls^[141] to his social worker Jean Duley on July 11 and 12. According to someone,^[who?] this was another example of "consciousness of guilt".^[142]

Ivins's "non-denial" denials [\[edit\]](#)

"The letters accompanying the anthrax read like the work of a jihadist, suggesting that their author was an Arab extremist—or someone masquerading as one—yet also advised recipients to take antibiotics, implying that whoever had mailed them never really intended to harm anyone."^[143] Experts have suggested that the anthrax mailings included a number of indications that the mailer was trying to *avoid* harming anyone with his warning letters.^{[51][109]} Examples: (1) None of the intended recipients of the letters were infected. (2) The seams on the backs of the envelopes were taped over as if to make certain the powders couldn't escape through open seams.^[144] (3) The letters were folded with the "pharmaceutical fold", which was used for centuries to safely contain and transport doses of powdered medicines (and currently to safely hold trace evidence).^[citation needed] (4) The media letters provided "medical advice": "TAKE PENACILIN NOW." (5) The senate letters informed the recipient that the powder was anthrax: "WE HAVE THIS ANTHRAX." And, (6) at the time of the mailings, it was generally believed that such powders could not escape from a sealed envelope - except through the two open corners where a letter opener is inserted, and those corners had been taped shut.^[145]

In June 2008, Ivins was involuntarily committed to a psychiatric hospital. The FBI said that during a June 5 group therapy session there, Ivins had a conversation with a witness, during which he made a series of statements about the anthrax mailings that the FBI said could best be characterized as "**non-denial denials**".^[146] When asked about the anthrax attacks and whether he could have had anything to do with them, the FBI said that Ivins admitted he suffered from loss of memory, stating that he would wake up dressed and wonder if he had gone out during the night. Some of his responses allegedly included the following selected quotes:

"I can tell you I don't have it in my heart to kill anybody"

"I do not have any recollection of ever have doing anything like that. As a matter of fact, I don't have no clue how to, how to make a bio-weapon and I don't want to know."

"I can tell you, I am not a killer at heart"

"If I found out I was involved in some way, and, and . . ."

"I don't think of myself as a vicious, a, a nasty evil person."

"I don't like to hurt people, accidentally, in, in any way. And [several scientists at USAMRIID] wouldn't do that. And I, in my right mind wouldn't do it [laughs] . . . But it's still, but I still feel responsibility because it [RMR-1029] wasn't locked up at the time . . ."

In an interview with a Confidential Human Resource (CHR) which took place on January 8, 2008, the FBI said that the CHR told FBI agents that since Ivins' last interview with the FBI (on November 1, 2007), Ivins [\[147\]](#)

has "on occasion spontaneously declared at work, 'I could never intentionally kill or hurt someone.'"

Doubts about FBI conclusions ^{[[edit](#)]}

After the [FBI](#) announced that Ivins acted alone, many people with a broad range of political views, some of whom were colleagues of Ivins, expressed doubts.^{[[148](#)]} Reasons cited for these doubts include that Ivins was only one of 100 people who could have worked with the vial used in the attacks and that the FBI couldn't place him near the New Jersey mailbox from which the anthrax was mailed.^{[[148](#)][[149](#)]} The FBI's own genetic consultant, Claire Fraser-Liggett stated that the failure to find any anthrax spores in Ivins' house, vehicle or on any of his belongings seriously undermined the case.^{[[138](#)]} Noting unanswered questions about the FBI's scientific tests and lack of peer review, Jeffrey Adamovicz, one of Ivins's supervisors in USAMRIID's bacteriology division, stated, "I'd say the vast majority of people [at Fort Detrick] think he had nothing to do with it."^{[[150](#)]} More than 200 colleagues attended his memorial service following his death.^{[[151](#)]}

Alternative theories proposed include FBI incompetence, that [Syria](#) or [Iraq](#) directed the attacks, or that similar to some [9/11 conspiracy theories](#) the U.S. government knew in advance that the attacks would occur.^{[[148](#)]} [Senator Patrick Leahy](#) who is Senate Judiciary Committee chairman and who had received an anthrax-tainted letter, said the FBI has not produced convincing evidence in the case.^{[*[citation needed](#)*]} *The Washington Post* called for an independent investigation in the case saying that reporters and scientists were poking holes in the case.^{[[152](#)]}

On September 17, 2008, Senator Patrick Leahy told FBI Director Robert Mueller during testimony before the Judiciary Committee which Leahy chairs, that he did not believe Army scientist Bruce Ivins acted alone in the 2001 anthrax attacks, stating:

"I believe there are others involved, either as accessories before or accessories after the fact. I believe that there are others out there. I believe there are others who could be charged with murder."^{[[153](#)]} "

Tom Daschle, the other Democratic senator targeted, believes Ivins was the sole culprit.^{[[154](#)]}

Although the FBI matched the genetic origin of the attack spores to the spores in Ivins' flask RMR-1029, the spores within flask RMR-1029 did not have the same silicon chemical "fingerprint" as the spores in the attack letters. The implication is that spores taken out of flask RMR-1029 had been used to grow *new* spores for the mailings.^{[[155](#)]}

On April 22, 2010, the [U.S. National Research Council](#), the operating arm of the National Academy of Sciences, convened a review committee that heard testimony from Henry Heine, a microbiologist who was formerly employed at the Army's biodefense laboratory in Maryland where Ivins had worked. Heine told the panel that it was impossible that the deadly spores had been produced undetected in Ivins's laboratory, as maintained by the F.B.I. He testified that using the equipment at the army lab, at least a year of intensive work would have been required to produce the quantity of spores contained in the letters, and that such an intensive effort could not have escaped the attention of colleagues. Heine also told the panel that lab technicians who worked closely with Ivins have told him they saw no such work. He stated further that

where Ivins worked biological containment measures were inadequate to prevent the Anthrax spores from floating out of the laboratory into animal cages and offices. "You'd have had dead animals or dead people," Heine said.^[156] According to Science Magazine,^[157] "Heine caveated his remarks by saying that he himself had no experience making anthrax stocks." Science magazine provides additional comments by Adam Driks of Loyola who stated that the amount of anthrax in the letters could be made in "a number of days". Emails by Ivins state, "We can presently make 1×10^{12} [one trillion] spores per week."^[158] And The New York Times reported on May 7, 2002, that the Leahy letter contained .871 grams of anthrax powder [equivalent to 871 billion spores]^[159]

In a technical article to be published in the *Journal of Bioterrorism & Biodefense* in 2011, three scientists argued that the preparation of the spores did require a high level of sophistication, contrary to the position taken by federal authorities that the material would have been unsophisticated. The paper is largely based on the high level of tin detected in tests of the mailed anthrax, and the tin may have been used to encapsulate the spores, which required processing not possible in laboratories to which Ivins had access. According to the scientific article, this raises the possibility that Ivins was not the perpetrator or did not act alone. Earlier in the investigation, the FBI had named tin as a substance "of interest" but the final report makes no mention of it and fails to address the high tin content. The chairwoman of the [National Academy of Science](#) panel that reviewed the FBI's scientific work and the director of a separate review by the [Government Accountability Office](#) said that the issues raised by the paper should be addressed. Other scientists, such as Johnathan L. Kiel, a retired Air Force scientist who worked on anthrax for many years, did not agree with the authors' assessments – saying that the tin might be a random contaminant rather than a clue to complex processing.^[160] Kiel said that tin might simply be picked up by the spores as a result of the use of metal lab containers, although he had not tested that idea.^[160]

In 2011, the chief of the Bacteriology Division at the Army laboratory, Patricia Worsham, said it lacked the facilities in 2001 to make the kind of spores in the letters. In 2011, the government conceded that the equipment required was not available in the lab calling into question a key pillar of the FBI's case, that Ivins had produced the anthrax in his lab. According to Worsham, the lab's equipment for drying spores, a machine the size of a refrigerator, was not in containment so that it would be expected that non-immunized personnel in that area would have become ill. Colleagues of Ivins at the lab have asserted that he couldn't have grown the quantity of anthrax used in the letters without their noticing it.^[161]

A spokesman for the Justice Department said that the investigators continue to believe that Ivins acted alone.^[160]

Evidence of 9/11 link to anthrax ^[edit]

Experts at the [Johns Hopkins Center for Civilian Biodefense Strategies](#) (CCBS) concluded that one of the nineteen 9/11 hijackers, [Ahmed al-Haznawi](#), had likely been exposed to anthrax. Alhaznawi and another man arrived in the emergency room of a Fort Lauderdale, Florida, hospital presenting an ugly, dark lesion on his leg that he said he developed after bumping into a suitcase two months earlier. Christos Tsonas thought the injury was curious, cleaned it and prescribed an antibiotic. After September 11, federal investigators found the medicine prescribed by Tsonas among the possessions of Alhaznawi.^[162]

Tsonas came to believe that Alhaznawi's lesion "was consistent with cutaneous anthrax," a disease that causes skin lesions. The experts at the Johns Hopkins Center for Civilian Biodefense Strategies interviewed Tsonas and prepared a memorandum that was circulated among top government officials. The memorandum said that the diagnosis of cutaneous anthrax was "the most probable and coherent interpretation of the data available" and that "such a conclusion of course raises the possibility that the hijackers were handling anthrax and were the perpetrators of the anthrax letter attacks."

Several 9/11 hijackers, including Alhaznawi, lived in Boca Raton, Florida, near American Media Inc. workplace of the first victim of the anthrax attacks. They also attended flight school there. Some of the hijackers rented apartments from a real estate agent who was the wife of an editor of The Sun, a publication of American Media. Further, a pharmacist in Delray Beach, Florida, stated he had told the F.B.I. that two of the 9/11 hijackers, [Mohamed Atta](#) and [Marwan al-Shehhi](#), entered the pharmacy seeking medicine to treat irritations on Mr. Atta's hands.^[162]

If the 9/11 hijackers were involved in the anthrax attacks they would probably have needed an accomplice to mail the tainted letters since the four recovered anthrax letters were postmarked on September 18 and October 9.^[162]

Congressional oversight ^[edit]

Congressman Rush Holt, whose district in New Jersey includes a mailbox from which anthrax letters are believed to have been mailed, called for an investigation of the anthrax attacks by Congress or by an independent commission he proposed in a bill entitled the Anthrax Attacks Investigation Act (H.R. 1248)^[163] Other members of Congress have also called for an independent investigation.^[164]

An official of the U.S. administration said in March 2010 that President Barack Obama probably would veto legislation authorizing the next budget for U.S. intelligence agencies if it called for a new investigation into the 2001 anthrax attacks, as such an investigation "would undermine public confidence" in an FBI probe.^[165] In a letter to congressional leaders, [Peter Orszag](#), the director of the [Office of Management and Budget](#) at the time, wrote that an investigation would be "duplicative", and expressed concern about the appearance and precedent involved when Congress commissions an agency Inspector General to replicate a criminal investigation, but did not list the anthrax investigation as an issue that was serious enough to advise the President to veto the entire bill.^[166]

National Academy of Sciences review ^[edit]

In what appears to have been a response to lingering skepticism, on September 16, 2008, the FBI asked the [National Academy of Sciences](#) (NAS) to conduct an independent review of the scientific evidence that led the agency to implicate U.S. Army researcher Bruce Ivins in the anthrax letter attacks of 2001.^[10] However, despite taking this action, Director Mueller said that the scientific methods applied in the investigation had already been vetted by the research community through the involvement of several dozen nonagency scientists.^[10]

The NAS review officially got underway on April 24, 2009.^[167] While the scope of the project included the consideration of facts and data surrounding the investigation of the 2001 *Bacillus anthracis* mailings, as well

as a review of the principles and methods used by the FBI, the NAS committee was not given the task to "undertake an assessment of the probative value of the scientific evidence in any specific component of the investigation, prosecution, or civil litigation," nor to offer any view on the guilt or innocence of any of the involved people.^[168]

In mid-2009, the NAS committee held public sessions, in which presentations were made by scientists, including scientists from the FBI laboratories.^{[169][170][171][172]} In September 2009, scientists, including **Paul Keim** of Northern Arizona University, Joseph Michael of Sandia National Laboratory and Peter Weber of Lawrence Livermore National Laboratory, presented their findings.^{[173][174]} In one of the presentations, scientists reported that they did not find any silica particles on the outside of the spores (i.e., there was no "weaponization"^[citation needed]), and only that only some of the spores in the anthrax letters contained **silicon** inside their spore coats. One of the spores was still inside the "mother germ", yet it already had silicon inside its spore coat.^{[22][175]}

In October 2010, the FBI submitted materials to NAS that it had not previously provided. Included in the new materials were results of analyses performed on environmental samples collected from an overseas site. Those analyses yielded evidence of the Ames strain in some samples. NAS recommended a review of those investigations.^[176]

The NAS committee released its report on February 15, 2011, concluding that it was "impossible to reach any definitive conclusion about the origins of the anthrax in the letters, based solely on the available scientific evidence".^[177] The report also challenged the FBI and U.S. Justice Department's conclusion that a single-spore batch of anthrax maintained by Ivins at his laboratory at Fort Detrick in Maryland was the parent material for the spores in the anthrax letters.^{[176][178][179]}

Aftermath ^[edit]

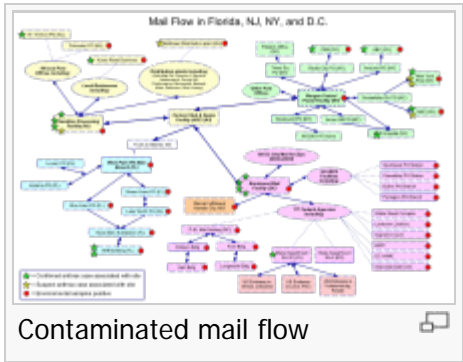
Contamination and cleanup ^[edit]

Dozens of buildings were contaminated with anthrax as a result of the mailings. AMI moved to a different building. The decontamination of the Brentwood postal facility took 26 months and cost \$130 million. The **Hamilton, New Jersey postal facility**^[180] remained closed until March 2005; its cleanup cost \$65 million. The **United States Environmental Protection Agency** spent \$41.7 million to clean up government buildings in Washington, D.C. One FBI document said the total damage exceeded \$1 billion.^[181]

The principal means of decontamination is **fumigation** with **chlorine dioxide** gas.

Political effects ^[edit]

The anthrax attacks, as well as the September 11, 2001 attacks, have spurred significant increases in U.S. government funding for biological warfare research and preparedness. For example, biowarfare-related



Contaminated mail flow

funding at the [National Institute of Allergy and Infectious Diseases](#) (NIAID) increased by \$1.5 billion in 2003. In 2004, Congress passed the [Project Bioshield Act](#), which provides \$5.6 billion over ten years for the purchase of new vaccines and drugs.^[182]

A theory that Iraq was behind the attacks, based upon the evidence that the powder was weaponized and some reports of alleged meetings between 9/11 conspirators and Iraqi officials, may have contributed to the momentum which ultimately led to the [2003 war](#).^[183]

After the 9/11 attacks and the subsequent anthrax mailings, lawmakers were pressed for legislation to combat further terrorist acts. Under heavy pressure from then [Attorney General John D. Ashcroft](#), a bipartisan compromise in the House Judiciary Committee allowed legislation for the [Patriot Act](#) to move forward for full consideration later that month.^{[184][185]}

Health ^[edit]

Years after the attack, several anthrax victims reported lingering health problems including fatigue, shortness of breath and memory loss. The [cause](#) of the reported symptoms is unknown.^[186]

A 2004 study proposed that the total number of people harmed by the anthrax attacks of 2001 should be raised to 68.^[187]

A [postal inspector](#), William Paliscak, became severely ill and disabled after removing an anthrax-contaminated air filter from the [Brentwood](#) mail facility on October 19, 2001. Although his doctors, [Tyler Cymet](#) and [Gary Kerkvliet](#), believe that the illness was caused by anthrax exposure, blood tests did not find anthrax bacteria or [antibodies](#), and therefore the [CDC](#) does not recognize it as a case of inhalational anthrax.^[188]

See also ^[edit]

- [1984 Rajneeshee bioterror attack](#) - first widely-recognized instance of bioterror in the United States
- [2003 ricin letters](#)
- *[Anthrax War](#)*, 2009 documentary
- [Centers for Disease Control](#)
- [Domestic terrorism in the United States](#)
- [Health crisis](#)
- [Irradiated mail](#)
- [List of journalists killed in the United States](#)
- [Timeline of the 2001 anthrax attacks](#)



References ^[edit]

- ↑ [Amerithrax or Anthrax Investigation](#)^[a], U.S. Federal Bureau of Investigation.
- ↑ [FBI .pdf file #847444 pp. 67](#) ^[*dead link*]

3. [^] ["Ivins case reignites debate on anthrax"](#) . *Los Angeles Times*. August 3, 2008. [Archived](#)  from the original on 12 May 2009. Retrieved April 5, 2009.
4. [^] ^{*a*} ^{*b*} ["Anthrax Vaccine -- posts by Meryl Nass, M.D"](#) . *Meryl Nass*. [Archived](#)  from the original on 10 August 2008. Retrieved August 10, 2008.
5. [^] [Greenwald, Glenn](#) (February 16, 2011) [Serious doubt cast on FBI's anthrax case against Bruce Ivans](#) , *Salon.com*
6. [^] ["U.S. officials declare researcher is anthrax killer"](#) . CNN. August 6, 2008. [Archived](#)  from the original on 8 August 2008. Retrieved August 7, 2008.
7. [^] Meyer, Josh (August 8, 2008). ["Anthrax investigation should be investigated, congressmen say"](#) . *Los Angeles Times*. *Associated Press*. [Archived](#)  from the original on 12 August 2008. Retrieved August 8, 2008.
8. [^] Cole, Leonard A. (2009). *The Anthrax Letters: A Bioterrorism Expert Investigates the Attacks That Shocked America--Case Closed?* . SkyhorsePublishing. ISBN 978-1-60239-715-6. Retrieved 29 March 2011.
9. [^] Scott Shane (February 19, 2010). ["F.B.I., Laying Out Evidence, Closes Anthrax Letters Case"](#) . *The New York Times*. [Archived](#)  from the original on 25 February 2010. Retrieved February 19, 2010.
10. [^] ^{*a*} ^{*b*} ^{*c*} ["FBI to Request Scientific Review of Its Anthrax Investigation"](#) . *ScienceNOW*. September 16, 2008. Retrieved September 12, 2011.
11. [^] Sheridan, Kerry (February 15, 2011). ["Science review casts doubt on 2001 anthrax case"](#) . Google News. [Agence France-Presse](#). Retrieved February 15, 2011.
12. [^] [FBI Summary Report](#)  Footnote p. 8
13. [^] Shane, Scott (February 16, 2011). ["Expert Panel Is Critical of F.B.I. Work in Investigating Anthrax Letters"](#) . *The New York Times*. [Archived](#)  from the original on 17 February 2011. Retrieved February 16, 2011.
14. [^] [Government Settles Anthrax Suit for \\$2.5 million](#)  *Frontline* November 29, 2011
15. [^] Sobieraj, Sandra (October 21, 2001). ["White House Mail Machine Has Anthrax"](#) . Washington Post. Retrieved December 18, 2013.
16. [^] Andrew C. Revkin and Dana Canedy, ["Anthrax Pervades Florida Site, and Experts See Likeness to That Sent to Senators"](#) , *The New York Times*, Dec. 5, 2001
17. [^] ["Chronology of 2001 anthrax events"](#) . sun-sentinel. 2012-12-24. Retrieved 2012-12-26.
18. [^] ["An Anthrax Widow May Sue U.S. Woman Whose Husband Died In Florida Is Angry At Army Lab's Possible Role As Bacteria's Source"](#) . Sun Sentinel. 9 October 2002. Retrieved 26 December 2012.
19. [^] ["My anthrax survivor's story - NBC News employee speaks out for the first time on her ordeal"](#) . *msnbc.com*. [Archived](#)  from the original on 20 April 2008. Retrieved March 30, 2008.
20. [^] ["Anthrax in America: Brentwood Post Office Facility in Washington Major Focal Point"](#) . CNN. February 7, 2001. Retrieved August 7, 2008.
21. [^] ^{*a*} ^{*b*} Ralph R. Frerichs (November 5, 2002). ["Anthrax Under The Microscope"](#) . Ph.ucla.edu. Retrieved September 12, 2011.
22. [^] ^{*a*} ^{*b*} ^{*c*} ["Sandia aids FBI in investigation of anthrax letters"](#) . YouTube. Retrieved September 12, 2011.
23. [^] ^{*a*} ^{*b*} ["J. Michael, September 25, 2009 NAS presentation, audio"](#) . Retrieved September 12, 2011.
24. [^] Lengel, Allan (September 16, 2005). ["Little Progress In FBI Probe of Anthrax Attacks"](#) . *The Washington Post*. Retrieved June 17, 2008.
25. [^] ["Anthrax: a Political Whodunit"](#) . abc.net.au. Retrieved March 30, 2008.
26. [^] [FBI Summary Report](#)  pp. 58
27. [^] Shane, Scott (February 19, 2010). ["F.B.I., Laying Out Evidence, Closes Anthrax Case"](#) . *The New York Times*. Retrieved 29 March 2011.
28. [^] Warrick, Joby (February 20, 2010). ["FBI investigation of 2001 anthrax attacks concluded; U.S. releases details"](#) .

The Washington Post. Retrieved 29 March 2011.

29. ^ "A hidden assault" . *The Washington Post*. February 20, 2010. Retrieved 29 March 2011.
30. ^ http://www.theregister.co.uk/2010/03/02/anthrax_feds_report/ 
31. ^ FNP Interactive - <http://www.fnpInteractive.com>  (February 23, 2010). "FBI report fails to end questions about Ivins' guilt - The Frederick News-Post Online" . Fredericknewspost.com. Retrieved September 12, 2011.
32. ^ NY Post Letter 
33. ^ Brokaw letter 
34. ^ FBI Summary Report  pp. 64
35. ^ FBI Summary Report  pp. 61
36. ^ "Microsoft Word - J_GEB page 404.doc"  (PDF). Retrieved September 12, 2011.
37. ^ FBI Summary Report  pp. 59
38. ^ FBI Summary Report  pp. 60
39. ^ FBI Summary Report  p. 60.
40. ^ FBI Summary Report  p. 60 *ff*
41. ^ FBI Summary Report  p. 59 *ff*
42. ^ "White House Mail Machine Has Anthrax" , Sandra Sobieraj, *Washington Post*, October 23, 2001. Accessed 2013-02-09. Archived  2009-09-16.
43. ^ "Press release: FBI & Bush Administration Sued over Anthrax Documents: Judicial Watch Wants to Know Why White House Went on Cipro Beginning September 11th, What Was Known and When?" . Judicial Watch. 7 June 2002. Archived from the original  on 9 March 2009. Retrieved 9 February 2013.
44. ^ "Traces of Terror; Suit Seeking Anthrax Documents Is Filed," . *The New York Times*. June 8, 2002. Retrieved 29 March 2011.
45. ^ Miller, Judith (October 14, 2001). "Fear Hits Newsroom in a Cloud of Powder" . *The New York Times*. Retrieved 29 March 2011.
46. ^ "Tampabay: Brokaw's aide tests positive" . Sptimes.com. Retrieved September 12, 2011.
47. ^ Powell, Michael; Blum, Justin (October 14, 2001). "Anthrax confirmed at Microsoft in Reno; 5 more cases in Florida" . *The Seattle Times*. Retrieved 29 March 2011.
48. ^ Ralph R. Frerichs. "Md. Pond Drained for Clues in Anthrax Probe" . Ph.ucla.edu. Retrieved September 12, 2011.
49. ^ Nieves, Evelyn (October 15, 2001). "A Nation Challenged: Nevada; Final Tests Are Negative For 4 Workers In Reno Office" . *The New York Times*. Retrieved 29 March 2011.
50. ^ National Enquirer, October 31, 2001
51. ^ ^a ^b Ralph R. Frerichs. "The Message in the Anthrax" . Ph.ucla.edu. Retrieved September 12, 2011.
52. ^ "FBI: Letter in Daschle's office a hoax" . *CNN*. January 3, 2002. Retrieved 29 March 2011.
53. ^ Thompson, Marilyn W. (September 14, 2003). "Start of rightcontent.inc" . *The Washington Post*. Retrieved 29 March 2011.
54. ^ "Fort Detrick's anthrax mystery" . Salon.com. January 26, 2002. Retrieved September 12, 2011.
55. ^ Ralph R. Frerichs. "The Message in the Anthrax" . Ph.ucla.edu. Retrieved September 12, 2011.
56. ^ ^a ^b "Dr. Steven J. Hatfill's Defamation Lawsuit Against Vanity Fair and Readers Digest Resolved – Publishers Issue Statements Retracting Implication Of Guilt" 
57. ^ Krauss, Clifford; Revkin, Andrew C. (November 29, 2001). "A Nation Challenged: Overseas Puzzle; U.S. Confirms Anthrax In Chilean Letter" . *The New York Times*. Retrieved 4 October 2011.
58. ^ "Letters carried fresh anthrax" . *The Baltimore Sun*. June 23, 2002. Retrieved 27 September 2012.
59. ^ "Massive cross-contamination feared" . *The New York Daily News*. October 26, 2001. Retrieved 27 September

2012.

60. ^ "U.S. Says Anthrax Germ In Mail Is 'Ames' Strain" . *The Washington Post*. October 26, 2002. Retrieved 27 September 2012.
61. ^ Broad, William J. (January 30, 2002). "Geographic Gaffe Misguides Anthrax Inquiry" . *The New York Times*. Retrieved 29 March 2011.
62. ^ Ralph R. Frerichs. "One Anthrax Answer: Ames Strain Not From Iowa" . Ph.ucla.edu. Retrieved September 12, 2011.
63. ^ ^a ^b "FBI explains the science behind the anthrax investigation" . *USA Today*. August 24, 2008. Retrieved 29 March 2011.
64. ^ "Comparative Genome Sequencing for Discovery of Novel Polymorphisms in *Bacillus anthracis*" . sciencemag.org. Retrieved March 30, 2008.
65. ^ Ralph R. Frerichs (November 2, 2002). "FBI Secretly Trying to Re-Create Anthrax From Mail Attacks" . Ph.ucla.edu. Retrieved September 12, 2011.
66. ^ "Anthrax Sleuthing - Science aids a nettlesome FBI criminal probe" . *Chemical & Engineering News*. Retrieved March 30, 2008.
67. ^ "FBI Anthrax Briefing, Aug 18 " . Docs.google.com. Retrieved September 12, 2011.
68. ^ FBI Summary Report  pp. 28 & 29
69. ^ Willman, David (September 17, 2008). "Scientist admits mistake on anthrax" . *The Los Angeles Times*. Retrieved 29 March 2011.
70. ^ *The Demon In the Freezer*, pp. 164-193
71. ^ William J. Broad, "Contradicting Some U.S. Officials, 3 Scientists Call Anthrax Powder High-Grade"  , *The New York Times*, Oct. 25, 2001
72. ^ Weiss, Rick; Eggen, Dan (October 25, 2001). "Additive Made Spores Deadlier" . *The Washington Post*. Retrieved 29 March 2011.
73. ^ Bernstein, Richard (February 24, 2010). "Haste Leaves Anthrax Case Unconcluded" . *The New York Times*. Retrieved 4 October 2011.
74. ^ "The Anthrax Attacks Remain Unsolved" . *The Wall Street Journal*. January 24, 2010. Archived  from the original on 13 May 2011. Retrieved 29 March 2011.
75. ^ "Loner Likely Sent Anthrax, FBI Says" . *Los Angeles Times*. Archived  from the original on 7 April 2008. Retrieved March 30, 2008.
76. ^ "Official: Unusual coating in anthrax mailings" . CNN. April 11, 2002. Retrieved March 30, 2008.
77. ^ "Anthrax Sent Through Mail Gained Potency by the Letter" . *The New York Times*. Archived  from the original on 6 April 2008. Retrieved March 30, 2008.
78. ^ "A Sophisticated Strain of Anthrax" . *Newsweek*. Archived  from the original on 6 April 2008. Retrieved March 30, 2008.
79. ^ Gugliotta, Guy; Matsumoto, Gary (October 28, 2002). "Start of rightcontent.inc" . *The Washington Post*. Retrieved 29 March 2011.
80. ^ "Anthrax Powder: State of the Art?" . Cryptome.info. Retrieved September 12, 2011.
81. ^ Douglas J. Beecher, "Forensic Application of Microbiological Culture Analysis To Identify Mail Intentionally Contaminated with *Bacillus anthracis* Spores" , *American Society For Microbiology*, August 2006
82. ^ "Science aids a nettlesome FBI criminal probe" . *Chemical & Engineering News*. Retrieved March 31, 2008.
83. ^ "Unsupported Conclusions on the *Bacillus anthracis* Spores" . *Applied and Environmental Microbiology*. Retrieved March 31, 2008.

84. [^] ^{*a*} ^{*b*} ["Anthrax Investigation / Bentonite / Cases"](#), *Vanderbilt Television News Archive*, October 28, 2001. Accessed May 30, 2009. [Archived](#) June 1, 2009.
85. [^] ^{*a*} ^{*b*} ["Response from ABC News re: the Saddam-anthrax reports"](#), Glenn Greenwald, *Salon.com*, April 11, 2007
86. [^] ^{*a*} ^{*b*} Washington, The (October 29, 2001). ["No proof of Iraqi contamination"](#). *Washington Times*. Retrieved September 12, 2011.
87. [^] ^{*a*} ^{*b*} ["Internet Archive Wayback Machine"](#). *Web.archive.org*. March 10, 2005. Archived from [the original](#) on 2005-03-10. Retrieved September 12, 2011.
88. [^] ["Press Briefing by Homeland Security Director Tom Ridge"](#). *whitehouse.gov*. Retrieved March 30, 2008.
89. [^] ["The Silicon Layer Supports Acid Resistance of Bacillus cereus Spores - Hirota et al. 192 \(1\): 111 - The Journal of Bacteriology"](#). *Jb.asm.org*. doi:10.1128/JB.00954-09. Retrieved September 12, 2011.
90. [^] ["Small Things Considered: Through the Looking Glass: Silicate in Bacterial Spores"](#). *Schaechter.asmblog.org*. January 11, 2010. Retrieved September 12, 2011.
91. [^] ^{*a*} ^{*b*} ^{*c*} ^{*d*} ["The Anthrax Attacks Remain Unsolved; The FBI disproved its main theory about how the spores were weaponized"](#). *The Wall Street Journal*. January 24, 2010. [Archived](#) from the original on 13 May 2011. Retrieved 29 March 2011.
92. [^] ["Peter Weber September 24, 2009 NAS presentation - audio"](#). Retrieved September 12, 2011.
93. [^] Richard Spertzel (August 5, 2008). ["Bruce Ivins Wasn't the Anthrax Culprit"](#). *The Wall Street Journal*. Retrieved 4 October 2011.
94. [^] Lichtblau, Eric; Wade, Nicholas (August 18, 2008). ["F.B.I. Details Anthrax Case, but Doubts Remain"](#). *The New York Times*. Retrieved 4 October 2011.
95. [^] Carrie Johnson (September 17, 2008). ["FBI to Get Expert Help In Anthrax Inquiry"](#). *The Washington Post*. Retrieved 4 October 2011.
96. [^] Rosenberg, Eric (17 September 2006). ["5 years after terror of anthrax, case grows colder"](#). *Chron*. Retrieved 26 December 2012.
97. [^] ^{*a*} ^{*b*} ["A Nation Challenged: The Inquiry; Experts See F.B.I. Missteps Hampering Anthrax Inquiry"](#). *The New York Times*. October 9, 2001. Retrieved 4 October 2011.
98. [^] ["FBI was told to blame Anthrax scare on Al Qaeda by White House officials"](#). *New York Daily News*. 2 August 2008. Retrieved 26 December 2012.
99. [^] ["Iraq 'behind US anthrax outbreaks'"](#), David Rose and Ed Vulliamy, *The Guardian*, October 14, 2001
100. [^] ["The Anthrax Source"](#). *The Wall Street Journal*. October 15, 2001. Retrieved 10 October 2011.
101. [^] [One Month After 9/11, McCain Said Anthrax 'May Have Come From Iraq,' Warned Iraq Is 'The Second Phase'"](#), [thinkprogress.org](#), August 1, 2008
102. [^] ["Troubling Anthrax Additive Found"](#), Brian Ross, Christopher Isham, Chris Vlasto and Gary Matsumoto, *ABC.com*, October 26, 2001 |url=<http://abcnews.go.com/US/story?id=92270> |
103. [^] ["Bentonite"](#). *CBS News*. August 2, 2008. Retrieved 29 March 2011.
104. [^] ["Myloie: Evidence Shows Saddam Is Behind Anthrax Attacks"](#), Jarret Wollstein, *Newsmax.com*, November 9, 2001
105. [^] ["Remember the anthrax attacks?"](#), Joseph Farah, *Worldnet Daily*, September 11, 2006
106. [^] ["Anthrax attacks: 5 years later"](#), Michelle Malkin, September 18, 2006
107. [^] York, Anthony (2002-08-31). ["Bio-sleuth or crackpot?"](#). *Salon.com*. Retrieved 2012-08-03.
108. [^] Jennifer Couzin (August 23, 2002). ["Unconventional Detective Bears Down on a Killer"](#). *Sciencemag.org*. Retrieved September 12, 2011.
109. [^] ^{*a*} ^{*b*} Ralph R. Frerichs. ["A Compilation of Evidence and Comments on the Source of the Mailed Anthrax"](#).

- Ph.ucla.edu. Retrieved September 12, 2011.
110. [^] Broad, William J. (December 14, 2001). "F.B.I. Queries Expert Who Sees Federal Lab Tie in Anthrax Cases" [↗]. *The New York Times*. Retrieved 29 March 2011.
 111. [^] Kristof, Nicholas D. (January 4, 2002). "Profile of a Killer" [↗]. *The New York Times*. Retrieved 29 March 2011.
 112. [^] Lemann, Nicholas (January 7, 2009). "Whodunit Dept.: The Anthrax Culprit" [↗]. *The New Yorker*. Retrieved September 12, 2011.
 113. [^] Miller, Judith; Broad, William J. (February 26, 2002). "U.S. Says Short List of 'Suspects' Is Being Checked in Anthrax Case" [↗]. *The New York Times*. Retrieved 29 March 2011.
 114. [^] Ralph R. Frerichs. "FBI Still Lacks Identifiable Suspect in Anthrax Probe" [↗]. Ph.ucla.edu. Retrieved September 12, 2011.
 115. [^] Barbara Hatch Rosenberg, "The Anthrax Case: What the FBI Knows" [↗], *Federation of American Scientists*, June 13, 2002
 116. [^] York, Anthony (June 21, 2002). "I'm ready for my close-up, Sen. Daschle" [↗]. *Salon*. Retrieved September 12, 2011.
 117. [^] Dave Altimari, Jack Dolan, and David Lightman (6-28-2). "The Case Of Dr. Hatfill - FBI Anthrax Mail Suspect Or Pawn". *Hartford Courant*.
 118. [^] "Who is Steven Hatfill?" [↗]. Prospect.org. Retrieved September 12, 2011.
 119. [^] Taylor, Guy (3 August 2002). "Scientist says FBI asked about setup; Anthrax researcher in the spotlight" [↗]. Washington, DC: The Washington Times. Retrieved 26 December 2012.
 120. [^] Shane, Scott; Lichtblau, Eric (June 28, 2008). "U.S. to Settle Lawsuit of Man Investigated in Anthrax Case" [↗]. *The New York Times*. Retrieved June 28, 2008.
 121. [^] "Judge Gives Rationale for Tossing Hatfill Suit Against Times" [↗]. *The New York Sun*. Retrieved April 2, 2008.
 122. [^] Lewis, Neil A. (July 15, 2008). "Dismissal of Suit Against Times Is Upheld" [↗]. *The New York Times*. Retrieved 29 March 2011.
 123. [^] Stout, David (December 15, 2008). "Justices Reject Appeal in Anthrax Libel Suit" [↗]. *The New York Times*. Retrieved 29 March 2011.
 124. [^] "Anthrax Evidence Called Mostly Circumstantial" [↗] *The New York Times* August 4, 2008
 125. [^] Doubts about anthrax story [↗] *Baltimore Sun* August 5, 2008
 126. [^] "Scientist's Suicide Linked to Anthrax Inquiry" [↗] *The New York Times* August 2, 2008
 127. [^] Dishneau, David (August 2, 2008). "Ivins had mild persona, but some saw dark side" [↗]. *USA Today*. Associated Press. Retrieved 10 October 2011.
 128. [^] Secret Reports: With Security Spotty, Many Had Access to Anthrax [↗] *Frontline* October 25, 2011
 129. [^] Goldstein, Amy; Hull, Anne; Tate, Julie (August 7, 2008). "Acquaintances and Counselor Recall the Scientist's Dark Side" [↗]. *The Washington Post*. Retrieved 29 March 2011.
 130. [^] Time Waster. "Anthrax Suspect "Homicidal, Sociopathic" " [↗]. The Smoking Gun. Retrieved September 12, 2011.
 131. [^] FBI Summary Report  pp. 9
 132. [^] FBI file #847376  pp. 6, 11
 133. [^] "Army Scientist Bruce Ivins Was Anthrax Killer, U.S. Says" [↗]. *Fox News*. August 6, 2008. Retrieved 29 March 2011.
 134. [^] "U.S.: Scientist was anthrax killer - US news - Security - msnbc.com" [↗]. MSNBC. Retrieved September 12, 2011.
 135. [^] "US officials release evidence against anthrax scientist Bruce Ivins" [↗]. *Daily News* (New York). August 7, 2008. Retrieved 29 March 2011.^[*dead link*]
 136. [^] ^a ^b ^c ^d ^e ^f Did Bruce Ivins Hide Attack Anthrax From the FBI? [↗] *Propublica* October 11, 2011

137. [^] [New Evidence Adds Doubt to FBI's Case Against Anthrax Suspect](#)  ProPublica October 10, 2011
138. [^] ^{*a*} ^{*b*} [The Anthrax Files](#)  Frontline October 11, 2011
139. [^] [DOJ Summary Report](#)  pp. 79.
140. [^] [FBI Summary Report](#)  pp. 50
141. [^] ["duleyvoicemail"](#) . Fredericknewspost.com. Retrieved September 12, 2011.
142. [^] ["Other Act Evidence As Evidence Of Consciousness Of Guilt | Federal Evidence Review"](#) . Federalevidence.com. Retrieved September 12, 2011.
143. [^] ["The Wrong Man - Magazine"](#) . The Atlantic. Retrieved September 12, 2011.
144. [^] Shane, Scott; Lichtblau, Eric (August 2, 2008). ["Will suicide close case on anthrax?"](#) . *The Seattle Times*. Retrieved 29 March 2011.
145. [^] Ralph R. Frerichs. ["How the Experts Missed Anthrax"](#) . Ph.ucla.edu. Retrieved September 12, 2011.
146. [^] [FBI Summary Report](#)  pp. 70-71.
147. [^] [FBI .pdf file #847551 pp. 47](#)  ^[*dead link*]
148. [^] ^{*a*} ^{*b*} ^{*c*} Manjoo, Farhad (August 7, 2008). ["The Anthrax Truth Movement"](#) . *Slate*. Retrieved September 12, 2011.
149. [^] Glenn Greenwald (August 6, 2008). ["The FBI's selective release of documents in the anthrax case"](#) . Salon.com. Retrieved September 12, 2011. ^[*dead link*]
150. [^] [The Case Still Isn't Closed](#)  Newsweek August 8, 2008
151. [^] [In Anthrax Case, Hindsight Shifts View of Ivins](#)  Wall Street Journal August 9, 2008
152. [^] ["Holes in the Anthrax Case?"](#) . *The Washington Post*. August 9, 2008. Retrieved 29 March 2011.
153. [^] Jason Ryan (@JasonRyanABC) (September 17, 2008). ["Leahy: Others Involved in Anthrax Attacks"](#) . Abcnews.go.com. Retrieved September 12, 2011.
154. [^] Kiely, Kathy; Leinwand, Donna (August 13, 2008). ["Daschle buys Ivins as sole culprit in 2001 anthrax attacks"](#) . *USA Today*. Retrieved 29 March 2011.
155. [^] [Anthrax investigation still yielding findings](#)  Nature News February 25, 2009
156. [^] Shane, Scott (April 22, 2010). ["Colleague Disputes Case Against Anthrax Suspect"](#) . *The New York Times*. [Archived](#)  from the original on 18 February 2011. Retrieved 29 March 2011.
157. [^] Bhattacharjee, Yudhijit (April 22, 2010). ["Ex-USAMRIID Scientist Defends Bruce Ivins Using Back-of-the-Envelope Math - ScienceInsider"](#) . News.sciencemag.org. Retrieved September 12, 2011.
158. [^] ["USAMRIID FOIA documents, Batch 57, page 3"](#)  (PDF). Retrieved September 12, 2011.
159. [^] Broad, William J.; Johnston, David (May 7, 2002). ["Anthrax Sent Through Mail Gained Potency by the Letter"](#) . *The New York Times*. Retrieved 29 March 2011.
160. [^] ^{*a*} ^{*b*} ^{*c*} Broad, William J.; Shane, Scott (October 9, 2011). ["Scientists' Analysis Disputes F.B.I. Closing of Anthrax Case"](#) . *New York Times*. Retrieved October 10, 2011.
161. [^] [New Documents Cast Doubt on Federal Anthrax Case](#)  Frontline July 18, 2011
162. [^] ^{*a*} ^{*b*} ^{*c*} ["A Nation Challenged: Bioterrorism; Report Linking Anthrax and Hijackers Is Investigated"](#)  *The New York Times*. March 23, 2002.
163. [^] ["Holt Calls for Congressional investigation into FBI handling of Anthrax attacks, Follows FBI Announcement to Close Its Investigation"](#) . *Press Release of Congressman Rush Holt, 12th District of NJ*. 3 March 2010. Retrieved 26 December 2012.
164. [^] ["Nadler Renews Call for Independent Investigation of Anthrax Attacks"](#) . *Press Release of Jerrold Nadler*. 4 March 2010. Retrieved 26 December 2012.
165. [^] ["Obama Veto Is Threatened on 2010 Intelligence Budget Measure"](#) . Bloomberg News. 15 March 2010. Retrieved 26 December 2012.

166. ^ FNP Interactive - <http://www.fnpInteractive.com> (March 20, 2010). "Administration rejects call to further probe Amerithrax - The Frederick News-Post Online". Fredericknewspost.com. Retrieved September 12, 2011.
167. ^ Shane, Scott (April 22, 2010). "Colleague Disputes Case Against Anthrax Suspect". *The New York Times*. Archived from the original on 18 February 2011. Retrieved 29 March 2011.
168. ^ "Project: Review of the Scientific Approaches used During the FBI's Investigation of the 2001 Bacillus Anthracis Mailings". nationalacademies.org. Retrieved September 12, 2011.
169. ^ "Meeting 1: Review of the Scientific Approaches used During the FBI's Investigation of the 2001 Bacillus Anthracis Mailings". nationalacademies.org. August 6, 2009. Retrieved September 12, 2011.
170. ^ <http://video.nationalacademies.org/ramgen/news/isbn/073009.rm>
171. ^ <http://video.nationalacademies.org/ramgen/news/isbn/073109.rm>
172. ^ "Request For Public Access Records Office". nationalacademies.org. Retrieved September 12, 2011.
173. ^ "Meeting 2: Review of the Scientific Approaches used During the FBI's Investigation of the 2001 Bacillus Anthracis Mailings". nationalacademies.org. Retrieved September 12, 2011.
174. ^ "Top News". National-Academies.org. September 25, 2009. Retrieved September 12, 2011.
175. ^ "J. Michael, September 25, 2008 NAS presentation, audio". Retrieved September 12, 2011.
176. ^ ^a ^b Findings of National Academy of Sciences Report
177. ^ [1]: Free report PDF, Review of the Scientific Approaches Used During the FBI's Investigation of the 2001 Anthrax Letters
178. ^ "Scientists question U.S. anthrax attack evidence". Reuters. February 15, 2011. Retrieved 28 May 2011.
179. ^ [2]: Short summary of National Academy of Sciences Report
180. ^ The Hamilton sectional center facility (SCF) is located near Trenton and processes mail to and from the 085 and 086 ZIP-code areas. See [ZIP code prefixes](#).
181. ^ Lengel, Allan. "Little Progress In FBI Probe of Anthrax Attacks". *The Washington Post*. Retrieved April 8, 2008.
182. ^ "President Bush Signs Project Bioshield Act of 2004". whitehouse.gov. Retrieved April 7, 2008.
183. ^ Harnden, Toby (October 26, 2001). "Building the case against Iraq". *The Daily Telegraph* (London). Retrieved April 7, 2008.
184. ^ Lancaster, John (October 4, 2001). "Start of rightcontent.inc". *The Washington Post*. Retrieved 29 March 2011.
185. ^ "Senate Approves USA PATRIOT Anti-Terrorism Legislation". Fas.org. Retrieved September 12, 2011.
186. ^ "Anthrax survivors find life a struggle". *The Baltimore Sun*. September 18, 2003. Retrieved 29 March 2011.
187. ^ Cymet, T. C.; Kerkvliet, G. J. (November 2004). "What is the true number of victims of the postal anthrax attack of 2001?". *The Journal of the American Osteopathic Association* **104** (11): 452. PMID 15602039. Retrieved 10 October 2011.
188. ^ Shane, Scott (June 7, 2005). "After a Shower of Anthrax, an Illness and a Mystery". *The New York Times*. Retrieved April 10, 2008.

Further reading [edit]

Books

- Coen, B; Nadler E (2009). *Dead Silence - Fear and Terror on the Anthrax Trail*. Counterpoint Press. ISBN 1-58243-509-X.
- Cole, LA (2009). *The Anthrax Letters, A Bioterrorism Expert Investigates the Attacks That Shocked America—Case Closed?*. Skyhorse Publishing. ISBN 1-60239-715-5.

- Graysmith, R (2003). *Amerithrax: The Hunt for the Anthrax Killer*. Berkley Books. ISBN 0-425-19190-7.
- Sarasin, P (2006). *Anthrax: Bioterror as Fact and Fantasy*. Harvard University Press. ISBN 0-674-02346-3. Retrieved 27 September 2011.
- Thompson, MW (2003). *The Killer Strain, Anthrax and a Government Exposed*. HarperCollins. ISBN 0-06-052278-X.
- **Willman, David** (2011), *The Mirage Man: Bruce Ivins, the Anthrax Attacks, and America's Rush to War*; Bantam Books.

Articles

- Rasko, D. A.; Worsham, P. L.; Abshire, T. G.; Stanley, S. T.; Bannan, J. D.; Wilson, M. R.; Langham, R. J.; Decker, R. S.; Jiang, L.; Read, T. D.; Phillippy, A. M.; Salzberg, S. L.; Pop, M.; Van Ert, M. N.; Kenefic, L. J.; Keim, P. S.; Fraser-Liggett, C. M.; Ravel, J. (2011). "Bacillus anthracis comparative genome analysis in support of the Amerithrax investigation". *Proceedings of the National Academy of Sciences* **108** (12): 5027–5032. doi:10.1073/pnas.1016657108. PMC 3064363. PMID 21383169. edit
- Matsumoto, Gary (November 28, 2003). "Anthrax Powder — State of the Art?". *Science* **302** (5650): 1492–7. doi:10.1126/science.302.5650.1492. PMID 14645823. Retrieved 29 March 2011.
- **Freed, D** (2010-05-01). "The Wrong Man". *The Atlantic*. Archived from the original on 13 May 2011. Retrieved 29 March 2011.
- *Risk assessment of anthrax threat letters*. Defence Research Establishment Suffield. September 2001. DRES-TR-2001-048. Retrieved 9 April 2014.

External links [edit]

- 'Amerithrax' investigation published by the **Federal Bureau of Investigation**
 - Investigation files
 - Public briefing of the **United States National Research Council** Review of Science in FBI's Anthrax Case (2011-02-15)
- Timeline and discussion of attacks by the **University of California, Los Angeles** Department of Epidemiology
- Filing by Steven Hatfill for *Hatfill v. Ashcroft*

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